

Patent claims

- 5 1. Method for the production of nitrate containing products (fertilizers, technical products) from undercooling melts, wherein a XN – water solution is evaporated up to a content of 50-99.8 weight % XN, where X is one or more selected from Ca, Mg, NH₄, Na and K, N is nitrate, the melt is cooled down to and kept at a temperature at or below the crystallisation point, finely divided solid XN powder consisting of the
10 equilibrium phases is added to the melt, where after melt drops are formed and allowed to cool and solidify during up to 70 seconds.
2. Method according to claim 1, wherein the content of XN is 70-99.5 weight %.
- 15 3. Method according to claim 1, wherein a cooling belt is used for solidification of the particles.
4. Method according to claim 3, wherein the belt is cooled by air, water oil or another medium.
- 20 5. Method according to claim 1, wherein the melt drops are cooled and solidified during 20-70 seconds.
6. Method according to claim 1, wherein the temperature is kept preferably 0-10°C
25 below starting crystallization point of the melt.
7. Method according to claim 1, wherein calcium nitrate is produced and CN*2H₂O and CN *3H₂O are used as seed particles.
- 30 8. Method according to claim 1, wherein particles are formed with particle size between 0.2 and 0.8 mm, preferably between 0.4 and 0.6 mm.

9. Method according to claim 1, wherein particles are made from a melt consisting of 74 weight % calcium nitrate, 14 weight % potassium nitrate and 12 weight % water.

5 10. Method according to claim 1, wherein solid particles consisting of a homogenous chemical mixture of nitrates, chlorides and crystal water were produced.

11. Method according to claim 10, wherein solid particles are made from a melt consisting essentially of 50 weight % calcium nitrate, 4 weight % ammonium
10 nitrate, 26.5 weight % calcium chloride and 18-20 weight % water.

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